Clinical Section

*Laboratory Examinations In Peptic Ulcer

By

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Of all laboratory tests used in the diagnosis of peptic ulcer, examination of the gastric contents is the one most frequently done. And in reviewing the findings of this examination the concentration of free hydrochloric acid and total acidity appear to interest clinicians most. While the average gastric acidity of a large number of peptic ulcer patients is perhaps 10 to 20 points above normal, yet the acid range of normal individuals overlaps so completely the acid range of peptic ulcer patients that little or no diagnostic value can be attached to the acidity in any given case. This has been confirmed at so many different medical clinics that it should be accepted as true. Yet in our hospitals estimations of the gastric acidity remains a very popular test in patients who have almost any abdominal complaints.

The removal of a single sample about an hour after eating crackers or toast and water is the most widely used technique in estimating the gastric acidity. This method has the shortcoming of not providing an adequate opportunity to examine the fasting contents of the stomach and for those who are interested in gastric acidity it provides a very feeble stimulus indeed, certainly far short of that provided by histamine. The largest series of gastric content examinations after the hypodermic stimulus of histamine was done by Dr. Polland of California. Out of 988 patients 198 were given a diagnosis of peptic ulcer and most of these had a free hydrochloric acid reading of over 100, with very few under 30. In the Outdoor Department of the Winnipeg General Hospital we have not obtained figures quite as high as Dr. Polland's figures either in gastric ulcer patients or in normals.

The most important information obtained by the gastric tube lies in the examination of the contents 6 to 7 hours after a meal. By this means delayed emptying time of the stomach may be detected at a lower cost than by x-ray examination. Observation of the material removed yields more and more information as one's experience grows. Recent investigation of the fasting contents during the night showed that the average curve of acidity in 20 normal persons ranged from 15 to zero, while in duodenal ulcer patients the night acidity averaged 40 to 60 and in gastric ulcer a somewhat lower figure of 20 to 60. Although some of the free hydrochloric estimations in the normal patients and ulcer cases were the same, in most instances the figures showed a greater difference than after a test meal.

Estimation of the degree of acidity in the empty stomach is a good control for the alkaline therapy in peptic ulcer. There is a striking record in the Guy's Hospital Reports of October, 1936, showing the information which the gastric tube provides in demonstrating the value of different forms of treatment in the control of acidity. A man aged 56 who for 20 years suffered from epigastric pain and vomiting due to gastric ulcer with marked hyperacidity was given 5 ounces of milk hourly as a continuous drip through a tube into the stomach. Frequent aspirations of the gastric contents through the tube showed that the free hydrochloric acid was completely neutralized and his pain relieved. Taking 5 ounces of milk at hourly intervals by mouth or through a tube into the jejunum did not neutralize the acid or relieve his pain.

A drop of Topfer's reagent on the aspirated gastric contents will demonstrate the presence or absence of free hydrochloric acid. The test papers marketed by the LaMotte Chemical Company in their small gastric acidity outfit demonstrate anacidity, hypoacidity and hyperacidity in the same manner as testing the reaction of the urine with litmus. A well lubricated Levin gastric tube, gauge 12 with the catheter tip when passed to the stomach through the nose rarely causes gagging or distress and when it is down there is remarkably little discomfort.

Examination of the stool for occult blood as a means of detecting eroding ulcers has a definite value. Negative reactions suggest healing of the ulcer. This test is as much neglected as gastric acidity estimation is overdone. There are probably two reasons for this—(1) The examination of feces is objectionable. (2) The chemical tests which were devised over 50 years ago were so very sensitive that positive reactions occurred when the patient had no significant lesion or when the diet contained the smallest trace of hemoglobin. Putting a patient on a special diet for 2 or 3 days prior to the test is a considerable inconvenience to him and often he may forget his restrictions and false results ensue. Furthermore, the hemoglobin-free, milk and cereal diets defeat the object of the test because very bland food lessens the bleeding of gastro-intestinal ulcer.

The second objection has been removed by Dr. J. R. Gregersen who made up the over sensitive Benzidene in a weak half-per cent solution. This strength will not show a reaction to any of the foods except large rare beef steaks, and peptic ulcer patients are not in the habit of choosing such a menu. As it requires about 20 drops of blood by mouth to produce a positive reaction in the feces the slight bleeding from the gums is not a likely source of error. Testing the centre of the fecal mass obviates any blood that may

* Part of a symposium on gastric ulcer held at the Winnipeg Medical Society, October 15, 1936.

come from anal fissures or bleeding hemorrhoids. It must be remembered that other lesions such as carcinoma, the dysenteries, esophogeal varicosities or venous stasis which occurs in cardiac failure may produce gastro-intestinal bleeding. Pulmonary lesions such as pneumonia, bronchiectasis and bronchogenic carcinoma are also possible sources for positive blood reactions in the feces. When all these possibilities are kept in mind the Gregersen test is extremely useful in diagnosis. Dr. Arthur Hearst, the eminent London specialist in gastro-intestinal diseases, does daily tests for occult blood on his peptic ulcer patients. It seems a paradox therefore that so many other physicians less skilled in the knowledge of peptic ulcer than he should never employ the test. Brathwaite's drug store market the reagents with directions. In the near future the LaMotte Chemical Co., of Baltimore, will market these in capsule form.

Hemoglobin estimation is advisable to detect any anemia that the patient may have either from bleeding peptic ulcers or as a result of the inadequate nutritional value of the ulcer diet. If there is active hemorrhage from an ulcer it is well to group the patient's blood and find a suitable donor before the transfusion becomes an emergency.

In a few very rare instances a gastric crisis of tabes has been mistaken for a peptic ulcer. While the clinical features of these two conditions have very little in common, a Wassermann test if positive may give a hint regarding the true nature of the disease. Moreover, it is possible for patients to have, independent of peptic ulcer, vascular syphilis requiring treatment.

In closing may I say a few words about the laboratory findings in alkalosis which sometimes results from the alkaline therapy for ulcer. As the symptom complex of weakness and excessive fatigue, impairment of mental efficiency and irritability with perhaps headache and vomiting becomes more widely known, laboratory tests for this condition will assume less importance. Only a small percentage of the patients taking alkaline therapy ever develop alkalosis and many of these already have some degree of renal insufficiency so that the kidney is unable to excrete the excess of alkali. In other patients early or late in the course of their treatment the kidney appears to take on an unexplainable sensitivity to alkalies and fails to excrete them as well as the other nitrogenous waste products. The amount of urine is usually increased, frequently exceeding 3000 cc. per day. A small amount of albumin and casts are present. The urine urea is low and chlorides almost absent. The reaction is usually alkaline and the addition of strong mineral acid produces effervescence due to the high bicarbonate content. The blood bicarbonate, calcium and magnesium are definitely increased. *The blood urea may be three or four times that of normal.* Death has resulted from this condition, but if it is recognised even in the advanced stages and the administration of alkalies stopped, rapid recovery takes place.

A Case of Epinephritic Abscess Following a Superficial Skin Infection

By

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and

S. JAUVOISH, M.D. (Man.)

Epinephritic Abscess. The term perinephritic abscess has been used to designate the condition described in this report but is in reality insufficiently descriptive. This case is of interest, not because of its rarity but because it exemplifies a process of suppuration localized to a region less accessible and more dangerous than would be deduced from the term perinephritic.

History. B.H., male, 21 years old, had a superficial abrasion on his right arm about the beginning of November, 1936. Three days later his arm became stiff, swollen and painful and within a week it was incised with liberation of a fair quantity of purulent matter. Inflammation soon subsided and the part healed. Three days following incision he complained of pain in the left loin, localizing it to the costo-muscular angle. He developed a remittent fever, chills, loss of appetite, restlessness and lethargy. He lost weight rapidly; originally 125 pounds he went down to 90 pounds by the end of November. He first came under our care on December 5th, 1936. His symptoms had apparently become accentuated and in addition to pain complained of vomiting following food, diarrhoea, polyuria and nocturia, and profuse night sweats.

Examination. The patient lay on his right side; he was emaciated, gaunt, dazed, and eyes deeply sunken. Temperature was 98, pulse 85, which within two hours rose to 102 and 120 respectively. The tongue was heavily coated, mouth and throat were clear. A small healed scar could be seen across the upper right arm. The chest was negative. Abdomen—there was definite though not marked rigidity of the upper left abdomen, and tenderness localized to the left costo-muscular angle, no mass could be felt; percussion revealed nothing abnormal. The lower limbs could be straightened forcefully without discomfort. Examination of urine—negative. Red blood cell count 3,420,000; no cell pathology; Hb. 68%; color index 1. White blood cell count 20,450; 92% polymorphs, 5% lymphocytes and 3% monocytes.

Were it not for localization of pain and tenderness to the area described, one should have been tempted to look for trouble within the abdomen.

Our next step was to proceed with a urological investigation and an intravenous pyelogram was done in the hope of avoiding the necessity for a cystoscopic examination and retrograde pyelogram.

X-Ray Findings. Flat plate showed a clear psoas margin on both sides and clear outline of lower halves of kidneys; there was no lateral spinal

curvature. Fifteen minute plate showed excretion on both sides. On the left there was elongation and narrowing of the upper calyx, intimating pressure of a mass from without or tumour within the kidney growing towards the periphery and stretching the calyx with it. Chest plate was negative, both diaphragms normal.

Pre-Operative Diagnosis. With these findings and clinical data we made the diagnosis of suppuration in relation to the upper pole of the kidney.

Operation. An operation was performed on December 8th. The incision extended obliquely from the left costo-muscular angle for 4 or 5 inches and proceeded as for exposure of the kidney. No evidence of pathology was found on cutting through the peri-renal fascia. The fingers were swept upwards and, on separation of upper pole, a pocket of pus was opened extending from the diaphragm above to the supero-medial aspect of the kidney below. The kidney was pressed out of shape at this point so as to form a concavity continuous with that of the abscess cavity. The peritoneum which formed the anterior wall of the cavity was quite thin and bowel was readily felt through it. Several ounces of non-odorous greenish yellow pus was evacuated by suction. The kidney was separated from the peri-renal tissue in order to make certain that no cortical abscess was present. Three rubber drains were inserted — one directed obliquely upwards within the cavity towards the diaphragm, the other transversely in front of the upper pole of the kidney and also within the cavity, a third obliquely downward toward the iliac fossa.

Post-Operative Course. The immediate post-operative condition was not particularly good, with a pulse of 140 that persisted to the following morning. Convalescence for the first two or three weeks was quite stormy with remittent fever ranging from 104 to 97, remissions bearing no relationship to the time of day; the pulse remained about 120. The patient perspired so profusely that relationship between fluid intake and urinary output was 3:1. Emaciation became even more extreme. About 6 days following operation he received a transfusion of 450 c.c. citrated blood, which had a beneficial effect. Blood culture done previous to this showed no growth and urinary culture was negative. Repeat leucocyte count a week after operation was 22,500. It was not until the latter half of the third week that definite improvement could be noted. Discharge from wound was quite profuse and the temperature gradually came down to normal by the fifth week. There was rapid gain in weight and improvement was generally sustained. Repetition of blood examination early in fifth week—leucocytes 16,000 R.B.Cs. 4,200,000, Hb 78%. He was discharged January 16th, 1937, less than six weeks following operation.

Through an accident, smears and culture of pus were not done. In view of the original history of a skin lesion, coupled with the nature of pus, it was evident that we were dealing with a staphylococcus infection. 5,000 units of staphylococcus-antitoxin was given at weekly intervals for two doses and followed with staphylococcus toxoid.

Comment: This condition is in reality a localized manifestation of a general blood infection with the initial focus in the arm. It is a much rarer type than the usual peri-nephric abscess because fat is less abundant here; and more dangerous because of its depth, proximity to the mid-line and close relation to the peritoneum in virtue of its pre-renal extent.

What is of foremost importance in the diagnosis and treatment of this condition is the determination of whether or not a renal focus is present. It must be remembered that the perinephrium, although closely related to the kidney, is really a separate structure with its own blood and lymph supply. Bacterial emboli can be carried to the perinephrium without invasion of the kidney—(Vermootin). On the other hand, infection may take place by direct extension from a suppurative lesion in the renal cortex either by rupture through the capsule or transmission through lymph and vascular channels. In the majority of cases it is almost impossible to determine pre-operatively whether or not the kidney is involved. Urinary and cyptoscopic evidence is usually negative and pyelographic findings when positive are only significant of pressure. Hugh Cabot considers the finding of pus producing cocci in an otherwise normal urine of definite importance. These may be obtained from smears following prolonged centrifuging or by culture.

In the majority of cases it is only on the operating table that one can determine the presence of a renal lesion. If adhesions are thick and separation of the kidney difficult it is better to be satisfied with drainage alone. If, however, adhesions are easily separated it is wiser to expose the kidney and determine the presence or absence of cortical mischief. In the case under discussion the kidney was exposed but not delivered; we felt satisfied after palpation that this procedure was not warranted. If doubt exists following exposure, the kidney ought to be decapsulated with the expectation of finding one or more small abscesses adherent to the capsule. This constitutes the opinion of the majority of authors.

Where a renal lesion has been overlooked or insufficiently drained, symptoms of deep-seated suppuration may persist and a sinus remain. There is, of course, that class of case where renal involvement is not severe and resolves following drainage of the abscess.

The importance of early operation in epinephritic abscess should be borne in mind for the prognosis and ultimate recovery are mainly dependent upon this. Were this case left alone and the patient able to withstand the results of infection there were other avenues of disaster open to him. The thin wall of peritoneum separ-

ating the abscess from the abdominal cavity could easily have broken through. Proximity of the abscess to the midline could easily have determined spread to the opposite side since the anatomical arrangement of peri-renal fascia would permit this. Upward spread to the thorax by way of lymphatic channels or by tracking through the costo-lumbar hiatus is not unlikely.

This case presents an important symptom triad —costo-lumbar tenderness, leucocytosis, and negative urine, of definite diagnostic value. It also demonstrates the diagnostic importance of an intravenous pyelogram and the resultant avoidance of instrumentation.

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College of Physicians and Surgeons of Manitoba

Beginning in 1935 the Registrar instituted a bureau of vital statistics in reference to the causes of death and ages of members of The College of Physicians and Surgeons of Manitoba. Previous to 1935, the information is rather fragmentary, but in a number of cases dating since 1923 a fairly accurate record was obtainable. The reports of the cause of death are obtained, so far as possible, from the physician in attendance during the last illness of the deceased member, not only from Manitoba but from wherever the member resided at the time of death.

At the end of 1936 reliable records were obtained in One Hundred and Eight (108) instances, and we quote the following statistics which may be of some interest:

Disease	Number	Age
Accidental:		
Automobile	3	36–65
Aeroplane	1	36
Drowning	1	26
Exposure	1	72
Suicide	2	32–59
Hypnotic	1	52
Anaemia:		
(Pernicious)	1	58
Brain and Nervous System:		
Cerebral Embolus	2	64–66
Cerebral Haemorrhage	7	55–75
Cerebral Thrombosis	1	68
Meningitis	1	50
Cerebral Sclerosis	3	61–84
Paralytic Stroke	2	49–69
Streptococcus Meningitis	1	33
Carcinoma		44–72
Brain	1	53
Breast	2	44–53
Liver	1	59
Pancreas	1	69
Prostate	2	60–71
Stomach	4	45–67
Tongue	1	71
Region unrecorded	1	72
Gastric Haemorrhage	1	51
Heart:		
Angina Pectoris	13	44–75
Coronary Artery:		
Embolus	1	57
Thrombosis	5	47–75
Occlusion	5	61–65
Sclerosis	2	56–72
Cardiac Dilatation	2	61–69
Myocardial Degeneration	1	78
Myocarditis	7	49–86
Myocardial Fibrosis	1	50
Unclassified	2	38–49
Haemorrhage: (Internal)	1	62
Hypertension:	1	63
Kidney:		
Bright's Disease	2	37–60
Influenzal Nephritis	1	68
Nephritis & Cholecystitis	1	55
Liver:		
Cirrhosis	1	47
Neuritis-Peripheral	1	47
Peritonitis	2	48–56
Pneumonia	11	26–78
	20–30—2	
	30–40—0	
	40–50—2	
	50–60—4	
	60–70—1	
	70–80—2	
Pulmonary Oedema	1	69
Septicaemia	2	39–60
Senility	1	90
Tetanus	1	45
Typhoid Fever	1	66 (1934)
Uraemia	1	70

W. G. CAMPBELL,
Registrar.

Special Articles and Association Notes

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British Columbia Health Insurance Scheme

The following are extracts from the Bulletin of the Vancouver Medical Association—

"A Brief Analysis of the Tentative Plan Suggested by the Health Insurance Committee of the College of Physicians and Surgeons of British Columbia."

Exemptions.—The actual list of exemptions contains some conditions that, we feel, are bound to lead to conflict, e.g., postpartum conditions. Here the possibility of cancer in later life, and of other conditions arising, is going to lead to much confusion and discussion.

The diabetic, too, cannot obtain insulin, or the pernicious anæmia patient liver extract, as part of the free benefits.

The Method of Payment for Medical Services

It is in this part of the plan that the chief differences arise between the Commission and ourselves.

The charge of $1.00 or $1.50 for first house calls in any one illness is an innovation, we feel, that is not satisfactory. In the first place, the insured will resent it greatly, and, we cannot but feel, with considerable justice. This is in direct contradiction to the principle of a complete service.

In the second place, there can be no doubt that it will be very difficult to collect— — —

The method of payment, by capitation fee for the general practitioner, by payment from a fixed pool of taxed bills for the specialist.

The capitation fee method of payment is, we believe, a bad method, based on a wrong principle. The medical profession of Canada has always opposed it. We cannot here go into detail—but we again record our settled opinion that, as has always been our rule, definite service should be paid for on the basis of a definite schedule of fees, as is done by the Workmen's Compensation Board and in private practice. We still adhere to this principle.

Next, as regards payment from a fixed pool. This is a most pernicious principle, as we believe. The specialist does the work, renders his bill according to the scale of fees adopted by the B. C. Medical Association, and then has no means of knowing what percentage of his bill he will receive—since this depends on the ratio of the total amount of bills sent in to the fixed pool. We have no hesitation whatever in saying that this is entirely wrong. No man in any other walk of life would undertake to do work without knowing how much he could be sure of receiving —no business man would sign any such contract as this.

We know, too, that under any scheme of Health Insurance work has always greatly increased—in fact, it is evident from the Preamble to the original Brief of Dr. G. M. Weir that a very great increase will be expected from us.

Mileage.—We must further point out that the Commission has definitely declined to make any allowance for mileage, which must be collected by arangement between the doctor and the patient. This is grossly unfair to the latter, and in fact will, we believe, make service under this scheme impossible in large areas of the Province.

From the standpoint of the Insured.

The Committee feels, and so informed the Commission, that it cannot consider this Act adequate from the public standpoint.

In the first place, it omits all the very people in the community who most need medical care—the indigent, those on relief, domestic servants, old-age and mothers' pensioners, casual and part-time labourers, and those earning less than ten dollars a week.

No provision is made for these at all, and the medical profession must still continue to carry this whole load of unpaid work, both in and out

of the hospital, without any compensation whatever.

After we had made many requests for action along this line—which, in our belief, was promised again and again, with no result—we finally obtained a statement from Premier Pattullo that the question of the indigent would be taken up and settled *after the Health Act was in force.* We frankly cannot accept this as of any value at all.

Secondly, the service given is not complete. The list of exemptions is the first break—and denies essential treatment to certain groups, e.g., the diabetic, the patient with pernicious anæmia, and to certain women who need surgical attention.

The charges for first calls are an additional tax to the man with a family, and may constitute quite a burden.

Hospitalisation.—This is, in our opinion, a very serious matter. Every hospital in British Columbia, almost without exception, is now filled to capacity. In such centres as Vancouver there is already a grave shortage, of some 500 to 600 beds. It is quite certain that when Health Insurance comes in there will be a great increase in hospitalisation—far more than the Commission will allow will be the case. Further, the experience of Australia and other places shews a great increase in hospital days for each patient under free plans.

Free hospitalisation is promised, and is one of the chief elements in the plan.

We do not believe that there is any possibility of giving it under present conditions.

The medical profession is not opposed, as we assured the Commission, to Health Insurance. Rather, it is in favour of it, almost unanimously; but there are certain principles which we feel must be observed, amongst them a fair and adequate remuneration for the medical man, on scales which conform with the findings of all the major surveys. We believe, too, that payment should be by a definite fee for definite work, not by capitation fee. That service given should be complete and inclusive, without exemptions, if a complete scheme is to be inaugurated—and if this is to be the case, sufficient money should be provided. We feel that if there is not enough money to provide a complete scheme, under terms fair to all concerned, then a partial scheme should be installed at first, under which we could feel our way safely and without injustice to any, towards a more ample scheme later. We oppose strongly the idea that the medical profession should take all the risk, but we reiterate our complete willingness to explore all avenues towards the establishment of a fair and practicable scheme, and will prepare and suggest alternative plans to that end, or consider honestly any that may be brought forward. But, as this plan stands at present, we cannot feel that it is satisfactory, or recommend it to the general profession.

Professor Boyd's New Book

An Introduction to Medical Science

William Boyd, M.D., M.R.C.P. (Edin), F.R.C.P. (Lond.), Dipl. Psych., F.R.S. (Canada), Professor of Pathology in the University of Manitoba, Pathologist to the Winnipeg General Hospital, Winnipeg, Canada
Lea and Febiger.

Professor Boyd had just published a small text book "An Introduction to Medical Science."

The book was intended primarily as an introduction to medical science for pupil nurses, and for this purpose it can be unreservedly recommended. It can, also, be recommended to students who are beginning their medical course and have finished their pre-medical work. It will serve as a general introduction to medical science giving the student a comprehensive view of the knowledge covered by a medical course at a time when he is liable to be hopelessly lost in the maze of detailed technical knowledge which he is expected to acquire in the first year of his course. It will be of interest to many lay people who are interested in the progress of medical science.

The first section reviews the nature and cause of disease generally and corresponds to the general pathology of the larger medical text books. It describes diseases due to bacteria, animal parasites, tumours, etc. The second half of the book deals with special regions, heart, lungs, nervous system, and so on. Thus the book follows in a general way the usual form of a text book of Pathology. It is, however, written in very simple manner and can be understood by anyone with a minimum training in scientific subjects such as is given in a high school. Although it deals with the subject in a concise fashion it covers the recent advances in the various departments of medical science, for example, the summary of the diseases of ductless glands and the description of the various internal secretions is in keeping with the most recent work. There is a chapter on "The Prevention of Diseases" which naturally deals mainly with infectious diseases. The last chapter on "The Nurse and the Laboratory" instructs the nurse in the methods of collecting material to be sent to the laboratory and also gives her some understanding of the meaning of the reports returned from the laboratory.

The material is well arranged and the type and headings are such as to make reading extremely easy. There are an adequate number of simple illustrations, many of which were made especially for this text.

Finally, the book cannot be reviewed without referring to the style in which it is written. One of the features of all Professor Boyd's text books has been the excellence of his literary style. This text is written in a way that makes the reading of it a pleasure. It is an outstanding example of modern English prose.

Medical men should have no hesitation in recommending "An Introduction to Medical Science" as a standard text book for training schools for nurses.

DR. ROBERT JAMES CAMPBELL

Dr. Robert James Campbell, aged 75, died almost literally in harness at his home, 426 Charles street, Winnipeg, on January 29th. On the previous day he had made his rounds and seemed his usual cheerful self. He graduated from the Manitoba Medical College in 1891, and before coming to Winnipeg practised in Rapid City, Carnduff, Sask., and Boissevain, where he was a partner of the late Dr. Lawrence Shaffner, former M.P. and Senator. Dr. Campbell practised in Winnipeg for the past fifteen years. He was interested for many years in the work of the College of Physicians and Surgeons, was President in 1926-27, and at the time of his death was Chairman of the Discipline Committee of the College. St. John's Cathedral, in which he served as vestryman, was another of his interests. He was a doctor of the old school with all that that implies of integrity and conscientiousness.

DR. DAVID ALEXANDER STEWART

Dr. David Alexander Stewart, Superintendent of Manitoba Sanatorium, Ninette, died at the Winnipeg General Hospital after a long illness on February 16th, aged 63.

His father, born in Cromar, Aberdeenshire, settled at Fletcher, Keith County, Ontario, where David was born. The lad was educated at Chatham, and, when the family moved to Manitoba, he took his Arts course at Manitoba College, graduating in 1899. Theology then claimed him, but while on a mission field in Frank, Alberta, his voice failed, and the example of the doctor in caring for the wounded after the disastrous rock slide induced him to enter Medicine. In 1906 he graduated from Manitoba Medical College, having paid his way by working as a reporter with the *Winnipeg Free Press*. For two years he served as an interne at the Winnipeg General Hospital, then became Field Secretary of the Anti Tuberculosis League of Manitoba, traversing the province to spread the gospel of the curability of tuberculosis and to raise funds for a sanatorium. His fiery zeal led to a breakdown, when it was discovered that his lungs were affected. A year at Trudeau Sanatorium, Saranac, N.Y., and as resident in a Connecticut institution gave him first hand knowledge of sanatorium life and so renewed him that he was able to work with his former vigour. Pelican Lake near Ninette was chosen as the site of the new Manitoba Sanatorium, and the first buildings were erected in 1910 with sixty beds available for patients.

When the quarter century anniversary of the Sanatorium was observed in 1935, Premier John Bracken and other speakers reviewed Dr. Stewart's work. At Ninette there are 250 beds; a Central Tuberculosis Clinic has been opened at Winnipeg; travelling clinics go out into the highways and byways of the province examining tuberculosis suspects and contacts; the death rate from the disease had been cut to one-fifth, and the menace to children from that source reduced to one-tenth.

Remarkable as were Dr. Stewart's activities in this connection, they did not limit the range of his interests, nor absorb the whole of his dynamic energy. Medical history, and the history of the fur traders in the Canadian North West found him an authority, and one of his special hobbies was to trace the sites of the forts of the Hudson's Bay, North-West and XYZ Companies along the Assiniboine and Souris rivers. For two years he was President of the Manitoba Historical and Scientific Society, and he was also a member of the Historic Sites Commission. His enthusiasm for education, beginning first with the Sanatorium school and extending to the University and to adult education, led to an honorary LL.D. degree Manitoba, the Honorary Presidency of the Manitoba Adult Education Committee and to his election by the Alumni as a Governor of the University. In 1928 he was president of the Manitoba Medical Association, and in 1935 he was appointed Chairman of the Committee on Credentials and Ethics of the Canadian Medical Association, an office which he held up till his death. In this capacity he wrote a new Code, agreeable to present day conditions and graced with quotations from the great medical classics. It was characteristic of his devotion to duty that as late as four days before his death he supervised a letter to be sent to members of the Committee and made marginal notes in his own handwriting.

His published work consisted of numerous papers reflecting the wide range of his interests, and marked with vigour and charm of style. He preached a wholesome and heartening philosophy of the sick room.

Though he received no instruction in art, he did creditable work in dry paint and water colors. At a recent exhibition of the Winnipeg Sketch Club four of his pictures were shown, one of them a view from his hospital window of the city atmosphere at 40 degrees below zero.

From its inception the Sanatorium was linked with the Medical School for the teaching of physical diagnosis. Not the least of Stewart's work was the training of young doctors in tuberculosis, and many who now occupy prominent posts will admit their obligation to his inspiration.

In 1915 he married Ida K. Bradshaw, a graduate of the Winnipeg General Hospital School of Nursing, and one of the earliest Social Service nurses in Canada. Later she became widely known through her writings in the cause of peace. Delicate in health for long years, she moved to Winnipeg last autumn to be near her husband, but the change was too great for her strength, and she succumbed in November, only a few weeks before him.

> *"They were lovely and pleasant in their lives,*
> *And in death they were not divided."*

An only son, David Bradshaw Stewart, is a student in Medicine.

Dr. Stewart exhibited the "angelic conjunction" of physician and priest. All his work was permeated with a deep moral earnestness and he lived "as ever in the great taskmaster's eye."

Department of Health and Public Welfare

IN APPRECIATION

With the passing of Dr. Stewart, the Department of Health and Public Welfare has lost one of its staunchest supporters, in fact has lost one of those who had a great deal to do with having Public Health activities in our Province put on a firm basis.

Dr. Stewart was a member of the Provincial Board of Health for the ten year period from 1924 to 1934, and in 1927 was a member of a Committee of the Board charged with making a survey of health conditions in Manitoba.

Dr. Stewart was also Chairman of a Health Committee appointed by the Manitoba Medical Association in 1926. This Committee reported to the annual meeting in September, 1927, and presented several regulations on Public Health which were transmitted by the Association to the newly-appointed Minister of Health and Public Welfare, Honourable Dr. E. W. Montgomery. It is gratifying to note that a lot of the resolutions have been already implemented.

Dr. Stewart always stood ready to assist the Department whenever requested to do so. He was a strong advocate of all accepted health measures and the Sanatorium and travelling Clinic have been the greatest forces for health education in the Province.

His span of service has ceased. He leaves us a goal to strive for. Our duty is clear—to follow the road he has pointed out and to give our service to the utmost to those who need it.

NEWS ITEMS

THE DIET OF THE NORMAL PERSON: The following is an article written by Jacob Buckstein, and published in the December issue of "Preventive Medicine" which the Department believes will prove of interest to the practising physician as well as of benefit to the lay person:—

"So much attention has been devoted to a consideration of diet in disease, that the subject of diet for the individual who is essentially normal is not sufficiently emphasized.

It is taken for granted that the patient who comes to us seeking help and advice is necessarily on a well balanced diet. Perhaps the difficulty with some of our patients, who on careful examination show no obvious evidence of organic disease, and whose condition is sometimes regarded as functional may be found in a diet that is improperly balanced as far as essential constituents are concerned.

Not enough inquiry is ordinarily made to determine whether the patient is obtaining all his dietary essentials, and what relation a possible lack of important food factors may have to his symptoms of malaise, irritability, easy fatigue, and 'run down' condition.

The close relationship of food and physical development is shown in many interesting ways. We find for example that the Hindus and most of the Japanese, Chinese and Malays rarely grow tall. Their diet, consisting mainly of rice, does not supply that optimum of protein essential to maximal growth. The Manchus, however, who have a more liberal amount of protein in their diet, do grow much taller.

It has been found that Japanese children have practically no milk, cheese or butter in their diet. They are ordinarily stunted in growth. That it is not an unmodifiable characteristic of the race is shown by the reports of the Japanese children born in the United States. On a diet containing better protein, more calcium and fat-soluble vitamin of milk, they grow taller and heavier. This is also true of the children of the foreign born. With better nutrition they grow considerably taller than their parents, the difference in some cases being four to five inches. Correlated with this is the fact that intellectual superiority is influenced by physical well-being. Those with poor nutrition are frequently handicapped mentally. Such children lack energy, are inattentive and slow in comprehension and often stupid. Moreover, their resistance to infection may be diminished.

What are the important food groups that enter into the normal well balanced diet?

The Protein Group of Foods

In this class milk is of prime importance. It is of this food that Dr. McCollum wrote 'Milk is the most satisfactory single article of diet that is suitable for consumption by man.' Professor Lusk stated, 'Milk is our greatest protective food and its use must be increased.'

Still another authority writes that 'carefully controlled experiments with diets containing systematically varied amounts of milk, lead to the conclusion that one quart of milk per child per day is the amount required for optimum storage of calcium, and presumably therefore for optimum development of teeth and bones.'

Corry Mann as a result of his four years of dietetic study in an English Institution wrote as follows: 'In practically every case it was noted that children receiving milk showed, even where there was obviously poor maternal care, that sleekness peculiar to a well nourished animal. Their hair had a glossy and bright appearance. Their nails were smooth, resilient and looked as if polished. General alertness was common to all of the children fed on milk. . . . It was gathered from teachers and janitors that the children receiving milk were much more alert and very much more boisterous and difficult to control than the others. The latter fact was only too evident when they were waiting in small groups to be weighed. The initial improvement continued over the second year.'

Professor Sherman has shown that the addition of milk to the diet of animals prolongs their life.

The reason for the great nutritive value of milk is that it contains the richest assortment of the various dietetic factors in a single food. It should therefore form an important part of the diet, particularly of the growing child. From the standpoint of the construction of animal tissue, the great value of milk lies in the excellent quality of its protein, which is the best that nature supplies us with, and superior to the protein found in vegetables.

Milk contains the necessary minerals so important for health and growth except that the amount of iron it contains is insufficient. The iron must therefore be obtained from other sources in order to make up for this deficiency, such as fruits, vegetables, whole grain cereals, eggs and meats. Milk is particularly valuable for its high content of calcium and phosphorus which are essential for the construction of bone. About one gram of calcium a day is important for the growing child. This can best be supplied by a

quart of milk a day. The dictum 'one quart of milk a day' has a very definite scientific basis. Even in the case of the adult who has achieved his maximum physical growth, at least a pint of milk may be advantageously included in the diet.

For those to whom milk is a 'melancholy' drink, it may be served in different ways. It may be incorporated with cereals or fruit, in beverages such as tea, cocoa or coffee or in soups or with vegetables. Custards, puddings, souffles or ice cream are other ways in which milk may be taken more agreeably. Cheese may be substituted. Buttermilk, fermented milk or milk with vichy may be preferred.

Meat, poultry and fish are other forms of protein of excellent biologic value. Meat and liver are among our best sources of iron. Meat is deficient in calcium and this important mineral must be obtained from other sources such as milk and green leafy vegetables. Fish is superior to meat in vitamin value and many of the fish oils form our best sources of vitamin D. Oysters, clams and lobsters are rich in iodine. A daily serving of meat, poultry or fish should be included in the normal well balanced diet.

Another highly valuable source of animal protein is the egg. The great value of the egg lies in the fact that in addition to the embryo it also contains material necessary for its growth into the full-fledged animal. It is therefore a complete food for developing animal life and is equally valuable for man. In addition to its biologically excellent protein it is one of our best sources of vitamin D. One egg a day with a minimum of three to four eggs a week should be included in the diet of our patients.

Our most important protein foods are thus milk, cheese, meat, fish or poultry and eggs. The amount of protein desirable is ordinarily figured as between 10 to 15% of the total number of calories on a diet that meets the physical needs of the individual. This represents an approximate minimum of about 75 grams of protein a day. A glass of whole milk contains 8 grams of protein of high biologic value. An ordinary serving of meat or fish, weighing about one-third of a pound, contains approximately 25 grams of protein. One-half cup of cottage cheese contains 19 grams and one-inch cube of other types of cheese has 7 grams. One egg contains 6 grams of protein. Most of the protein in the normal diet should be obtained from these biologically excellent sources.

The Committee on Nutrition of the British Medical Association, in agreement with the best American opinion, has stated the importance of animal protein as follows: 'It is now usual to differentiate the protein foodstuffs into two classes. Proteins from animal sources are designated as first-class proteins, whilst those of vegetable origin are relegated to the second class. The first-class proteins, besides possessing a higher nutritional value than second-class proteins, are more nearly completely absorbed by the body.'

The Cereal Group

Cereals are primarily of value as a source of energy. While proteins are present, they are not biologically of such high quality as to be relied upon entirely for construction of the tissues of the human body. They must, therefore, be supplemented by such proteins as the casein of milk. If the whole grain is used with its coatings and it is not degerminated, then the cereal becomes an important source of mineral constituents, particularly iron, and of vitamin B.

Unfortunately the bran and germ removed by the roller-mill process contain practically all the important minerals—calcium, phosphorus, iron and iodine. Particularly significant is the loss of iron since milk which is an excellent source of calcium and phosphorus is also poor in iron. In addition there is a loss of important vitamins.

There is, however, no objection to white bread if milk, green leafy vegetables and citrus fruits are included in the diet in liberal amounts. While minerals and vitamins are destroyed in the milling process, what is left is still excellent food and one of our best sources of energy. However, where more than one-third of the energy requirement is obtained from cereal foods, it is a wise precaution to have our patients include some cereal in the unmilled state.

Fruits and Vegetables

It is important that our patients be instructed to include liberal servings of fruits and vegetables in their daily menu for the following three main reasons. They are rich in mineral matter. They are among our most important sources of vitamins. In addition they supply bulk which helps to regulate normal bowel function. In this group the green leafy vegetables, tomatoes, carrots, potatoes as well as the citrus fruits are of outstanding importance. The normal diet should contain at least two vegetables daily, one of these to be a liberal serving of the green leafy variety such as lettuce, spinach or cabbage. The tomato may be served several times a week. The vitamin C of which it is an excellent source is fortunately not materially impaired by heating or canning. Similarly the potato because of the amounts in which it is ordinarily eaten is a good source of vitamin C and it may in part replace cereals and bread.

Fruit should be included twice a day. Of outstanding importance are of course those of the citrus variety, orange and grapefruit. Over two centuries ago the importance of these foods in the prevention and cure of scurvy was recognized.

'Seek the cure of scurvy neither in the armamentarium of the physician nor in the apothecary shops. The druggist will be of as little aid to you as the art of the surgeon. On the other hand employ fresh vegetables, the juice of fresh antiscorbutic plants, oranges and lemons or the juice of those fruits preserved with sugar; in this way without other means you will be able to overcome this terrible disease.' This advice summarizes our knowledge of both treatment and prevention to this very day.

The importance of a sufficient amount of fresh fruit in the diet is shown by the experience of Professor Hopkins of Cambridge University. He noticed that school boys during the winter were unsatisfactory in their work. The diet contained only cooked foods and no greens. The condition was greatly improved by the addition of fresh fruit to the diet.

Our patients should be instructed to include at least one serving of a citrus fruit in the daily diet.

The Fatty Foods

Butter and cream are among the most important members of this group. They are rich in fuel value, palatable and except for fish oils and egg yolk are our best sources of vitamin A. They are readily incorporated in various ways in the preparation of many dishes. Buttering bread not only adds to its palatability but the fat leaves the stomach slowly and wards off hunger. It 'sticks to the ribs.'

It has been shown that Italian laborers on railway construction did not work up to par at eleven in the morning. Their work became more satisfactory when the amount of fat in the diet was increased. This also has been found to be true of Swedish and Canadian lumbermen, and of Welsh miners. By staving off premature hunger, they felt more satisfied, and their work in consequence was more effective. A minimum of one-half ounce of butter should be included in the daily diet of even those of our patients who are on a reducing diet.

Sweets

These supply in palatable form carbohydrates which are easily assimilated and available as a ready source

of energy. Because of their appeal to the taste the danger exists that refined sugars may supplant the desire for more highly valuable foods. Our patients should therefore be encouraged to satisfy their craving for sweets by eating the sugar containing fruits which in addition are important sources of minerals and vitamins. Candy should be placed at the end of the meal after the more important foods have been consumed.

The skeleton of the well balanced diet as recommended to our patients should therefore consist of the following foods:

1. At least a pint of milk a day either as such or incorporated in various ways as previously described.

2. One egg a day with a minimum of three to four eggs a week.

3. One serving of meat, fish or poultry a day.

4. At least two vegetables a day, one of these to be of the green leafy variety such as spinach or lettuce.

5. Two servings of fruit at least one to be of the citrus variety such as orange or grapefruit.

6. In addition butter, tomato and potato may be advantageously included.

The remainder of the diet may then be made up of cereals, bread and such other fruits and vegetables as the individual's taste may dictate. The consumption of refined sugar may be diminished if necessary or as candy placed at the end of the meal. Finally one may add the admonition of McCollum: 'Eat what you want, after you have eaten what you should.'

Added to this are, of course, those psychological factors which by appealing to the appetite increase the flow of the stomach and intestinal juices and prepare for these foods a favorable reception. The patient should be composed, the surroundings and the conversation pleasant, the food well served with an eye to attractive combinations of color in pleasing variety. The food should be chewed thoroughly and eaten slowly. While 'hunger makes the best sauce' these additional aids will coax the digestive machinery into serving us with maximum efficiency. Many years ago a great Hebrew sage wrote: 'Better is a morsel and quiet within, than a house full of feasting and strife.'

On the whole, it is a triumph of man's instinct, developed through natural selection, that it has shown itself to be a pretty reliable guide and except under conditions of unusual economic distress has saved him from serious nutritional disaster. Science has explained more rationally the reasons for this survival and clearly demonstrated some of the dangerous pitfalls that are to be avoided in order to assure the maximum physical and mental virility of the race.

It will teach us to beware of false gods who attempt to lead us away from many of the sound teachings of experience."

COMMUNICABLE DISEASES REPORTED

Urban and Rural - January, 1937.

Occurring in the Municipalities of:

Influenza: Total 511—Beausejour 500, Unorganized 4, St. Laurent 3, St. Vital 1, Portage City 1, Winnipeg 2.

Chickenpox: Total 250—Winnipeg 178, Dauphin Town 16, St. Boniface 14, Brandon 10, The Pas 9, Kildonan East 8, Lorne 5, St. James 3, Ericksdale 2, Roland 2, Kildonan West 1, Thompson 1, Unorganized 1.

Scarlet Fever: Total 220—Winnipeg 108, St. James 33, Kildonan East 15, Rockwood 10, Shell River 7, Kildonan West 5, Norfolk North 5, St. Boniface 4, St. Vital 4, Kildonan North 3, Thompson 3, Dauphin Town 2, Morris Town 2, Rosser 2, Springfield 2, Westbourne 2, Charleswood 1, Fort Garry 1, Gilbert Plains 1, Gimli Town 1, Grandview Rural 1, Lac du Bonnet 1, Morden 1, Portage Rural 1, Roblin Town 1, Selkirk 1, St. Paul East 1, Transcona 1, Tuxedo 1.

Measles: Total 135—Winnipeg 27, Unorganized 26, Pipestone 19, Grandview Town 15, Oakland 12, Brandon 8, Lakeview 7, Norfolk South 4, Silver Creek 4, St. Boniface 4, Swan River Rural 2, St. Vital 2, Westbourne 2, Gladstone Town 2, Kildonan East 1.

Tuberculosis: Total 34—Winnipeg 7, Bifrost 4, Brandon 3, St. James 2, Unorganized 2, Beausejour 1, Brokenhead 1, Carman 1, Gladstone Town 1, Lawrence 1, Portage Rural 1, Rhineland 1, Selkirk 1, Springfield 1, Stanley 1, Swan River Town 1, St. Boniface 1, St. Andrews 1, St. Clements 1, St. Vital 1, Woodworth 1.

Mumps: Total 30—Winnipeg 14, Roblin Rural 6, Albert 4, Hanover 1, Norfolk North 1, Roblin Town 1, Selkirk 1, St. Boniface 1, St. James 1.

German Measles: Total 28—Unorganized 23, Roland 4, Kildonan East 1.

Whooping Cough: Total 18—St. Boniface 7, Winnipeg 5, St. James 4, Tuxedo 2.

Erysipelas: Total 17—Winnipeg 10, Brandon 1, Brooklands 1, Dauphin Town 1, Grandview Rural 1, Kildonan West 1, St. Vital 1, Whitemouth 1.

Diphtheria: Total 11—Winnipeg 11.

Anterior Poliomyelitis: Total 5—Turtle Mountain 2, Roland 1, Rosedale 1, St. Boniface 1.

Cerebrospinal Meningitis: Total 2—Whitemouth 1, Winnipeg 1.

Trachoma: Total 2—Morris Rural 1, Tache 1.

Diphtheria Carriers: Total 2—Winnipeg 1, Portage City 1.

Typhoid Fever: Total 1—Hanover 1.

Venereal Disease: Total 116—Gonorrhoea 84, Syphilis 32.

DEATHS FROM ALL CAUSES IN MANITOBA

For the Month of December, 1936.

URBAN—Cancer 45, Pneumonia 16, Tuberculosis 5, Syphilis 2, Diphtheria 1, Infantile Paralysis 1, Influenza 1, Paratyphoid Fever 1, all others under one year 2, all others 147, Stillbirths 11. Total 232.

RURAL—Pneumonia 36, Cancer 31, Tuberculosis 13, Influenza 9, Puerperal Septicaemia 2, Diphtheria 1, Infantile Paralysis 1, Measles 1, Mumps 1, Whooping Cough 1, Erysipelas 1, all others under 1 year 4, all others 173, Stillbirths 13. Total 287.

INDIAN—Tuberculosis 10, Pneumonia 5, Measles 1, all others under 1 year 1, all others 9, Stillbirths 1. Total 27.

Medical Library University of Manitoba

A summary of the contents of some of the journals available for practitioners, submitted by the Faculty of Medicine of the University of Manitoba. Compiled by T. E. Holland, B.Sc., M.D. (Man.), F.R.C.S. (Edin.).

"The Clinical Journal"—February, 1937.

"The Surgical Significance of Vomiting"—by R. J. McNeill Love, M.S., Lond., F.R.C.S. (Eng.).

"Prolapse of the Uterus"—by H. J. McCurrich, M.S., F.R.C.S., M.C.O.G.

"Stammering: Some Facts and Theories"—by H. St. John Ramsey, M.A., Speech Therapist and Lecturer in Speech, Guy's Hospital.

"Breathlessness"—by C. Gaulter Magee, M.R.C.P. (Ed.), D.P.H.

"The New England Journal of Medicine"—January 28th, 1937.

"The Value of Sympathectomy in the Treatment of Vascular Disease"—by R. H. Smithwick, M.D., Massachusetts General Hospital.

"The Border Lines of Knowledge in Present-Day Psychiatry"—by Gregory Zilboorg, M.D.

"Dangerous Dusts"—by John B. Hawes 2nd, M.D.

"Post-Graduate Medical Journal"—February, 1937.

Special Nephritis Number

"Classification of Nephritis"—by John Gray, M.D., British Post-Graduate Medical School.

"Acute and Sub-Acute Nephritis"—by Robert Platt, M.D., F.R.C.P., Sheffield.

"Chronic Nephritis"—by A. G. Gibson, M.D., F.R.C.P., Oxford.

"Nephrosis"—by T. Izod Bennett, M.D., F.R.C.P., Middlesex Hospital.

"Essential Hypertension"—by O. L. V. De Wesselow, D.M., F.R.C.P., London.

"Renal Function Tests in Nephritis and Allied Conditions"—by E. C. Dodds, M.V.O., D.Sc., M.D., F.R.C.P., and J. Douglas Robertson, M.D., D.P.H.

"Edinburgh Medical Journal"—May, 1936.

"Clinical Recollections and Reflections" II. Notes on the Diagnosis of some Febrile Conditions—by G. Lovell Gullund, C.M.G., M.D., F.R.C.P. (Ed.).

"Acid Ammonium Phosphate as a Urinary Acidifier"—by Stanley Alstead, M.D., Liverp., M.R.C.P., Lond., Pollok Lecturer in Pharmacology, Glasgow University, and Physician to the Out-Patient Department, Western Infirmary of Glasgow.

"Leuco-Erythroblastosis"—by J. McMichael, M.D., M.R.C.P. (Ed.), Lecturer in Human Physiology, Edinburgh University, and J. W. McWee, D.S.O., M.D., D.Sc., F.R.C.P., Physician, and Holme Lecturer in Clinical Medicine, University College Hospital.

"The Parenteral Administration of Vitamin B^1 in the Treatment of Polyneuritis and Other Conditions"—by W. Ritchie Russell, M.D., F.R.C.P. (Ed.), Assistant Physician, Royal Infirmary of Edinburgh.

"The Effect of Constitutional 'Vitality' on Prognosis, as Illustrated by Acute Appendicitis"—by W. O. Kermack and A. G. M'Kendrick.

"A Note on the Depot Treatment of Pernicious Anaemia"—by R. M. Murray-Lyon, M.D., F.R.C.P., (Ed.).

"Edinburgh Medical Journal"—January, 1937.

"Clinical Recollections and Reflections" IX. The Conservative Treatment of Acute Infections—by Sir David Wilkie, Professor of Surgery, University of Edinburgh.

"The Doctor and the Public Happiness"—by Lord Horder, K.C.V.O., F.R.C.P.

"A Study of the Contractions of The Non-Pregnant Human Uterus"—by Edwin M. Robertson F.R.C.S. (Ed.), M.C.O.G.

"Experiments in Intestinal Obstruction" The Role Played by the Diminution of the Effective Circulating Blood Volume in Acute Intestinal Obstruction —by Ian Aird, M.Ch., F.R.C.S. (Ed.).

"Studies in Method and Standardisation of Blood Examination" III. Haemoglobinometry by a Whole-Blood Method—by W. F. Harvey, M.A., M.B., F.R.C.P. (Ed.).

"Sarcomatosis in Fowls Following Weasel Bites"—With a Discussion on Tumour Formation in General—by J. P. McGowan, M.A., M.D., Aberdeen.

"Studies on Carbohydrate Metabolism in Nervous and Mental Disorders II. A Comparison of the Hyperglycaemic Index and Choline Esterase Activity in Anxiety and Depressive States"—by Henry Tod, B.Sc., Ph.D. (Edin.). Biochemist, The Royal Edinburgh Hospital, and Maxwell Shaw Jones, M.B., M.R.C.P. (Ed.), D.P.M., Senior Assistant Physician, Royal Edinburgh Hospital, Walter Smith Kay, Research Fellow in Psychiatry, University of Edinburgh.

"Journal of the American Medical Association"—February 13th, 1937.

"Acute Haematogenous Osteomyelitis in Children"—by Vernon R. Hart, M.D., Minneapolis.
Clinical findings and treatment are given.

NEW CATALOGUE

Health Belts for Women and Men

A very nicely illustrated and descriptive Catalogue showing a wide range of "Fishermade" Health Supports for Women and Health Belts for Men, has recently been issued and distributed by Fisher & Burpe, Ltd., 219 Kennedy Street, Winnipeg. A number of these Abdominal Supports are illustrated in Peach Color (which is the color of the pre-shrunken material used in the making of these Supports and Peach is the color now in vogue among Women). Several pages are devoted to giving considerable information of a helpful nature to the Physician in respect to the taking of measurements and selecting a suitable Abdominal Support for the individual case.

Illustrations of special up-to-date machines used in the factory of Fisher & Burpe, Ltd., in making "Fishermade" Abdominal Supports and "Fisherknit" Elastic Hosiery are also shown.

Suitable private fitting rooms, with specially constructed fitting tables for placing patients in proper positions for Ptosis and other cases, are available in the premises. A Graduate Nurse, specially trained in fitting Medical and Surgical Cases, is in daily attendance to take care of Women Patients. Specially trained male attendants take care of Men Patients sent by Physicians.

"Fishermade" Health Supports for Women and Health Belts for Men are carried in stock in nearly every large town and city throughout Canada.

Inside the front cover of this 4th Edition Catalogue "Prescription Blanks" are provided for the convenience of Physicians in directing their Patients for fittings. This Catalogue will be found of great convenience in a Physician's office. A copy will be mailed free on request; see Fisher & Burpe, Ltd., advt. on page 48 of this issue. —Advt.